

**PROCEDURE 29 - Small Boat Safety**

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## Synopsis

The purpose of this procedure is to establish requirements relative to the hazards associated with the operation of small boats. This procedure applies to all NWS work locations and employees where small boats are owned/operated by an NWS facility.

### **Initial Implementation Requirements:**

- **Analyze Site Operations versus Procedure Requirements**
- **Develop/Obtain Documentation/Information required for Site**
  - Obtain Vessel Certification Number from State. (29.3.1c.1)
  - Determine Fuel Tank Capacity. (29.3.4c)
- **Designate Person to Administer Small Boat Safety Procedure Requirements**
- **Provide Local Training for Site Personnel**
  - Training of Certified Boat Operator (CBO) and all crew. (29.3.11a)
  - Emergency Procedure Training for CBO and all crew, as needed. (29.3.11a.1)
- **Provide Special Training of Site Personnel**
  - Certified Boat Operator Training. (29.2.1)
- **Inventory Material/Equipment (Procure as needed)**
  - Minimum Equipment as specified in 29.3.3a-n (25.5.2b)

### **Recurring and Annual Task Requirements:**

- **Perform Inspection/Assessment/Testing**
  - Conduct Periodic Safety Inspections. (29.3.10a)
  - Perform Preventive Maintenance of all required equipment. (29.3.10b)
- **Review/Update Documentation/Information required for Site**
- **Provide Refresher Training for Site Personnel**
  - Small Boat Safety Refresher Training for CBO and all crew. (29.3.11a), as needed
  - Emergency Procedure Refresher Training for CBO and all crew, as needed. (29.3.11a.1)
  - Changing job assignments and additional responsibility training. (29.3.11a.2), as needed
- **Provide Refresher Special Training for Site Personnel**
  - Certified Boat Operator refresher training, if applicable.
- **Inspect/Replace/Maintain Material/Equipment**
  - Minimum Equipment as specified in 29.3.3a-n (25.5.2b)

**Small Boat Safety Checklist**

<b>Requirements</b>	<b>Reference</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>	<b>Comments</b>
Is initial and annual review of this procedure conducted and documented?	29.4.2				
Does the Certified Boat Operator (CBO) ensure that the crew complies with all applicable safety requirements and procedures?	29.3.1c.4				
Are all boats marked with a valid certification number?	29.3.1c.1				
Do only Certified Boat Operators operate boats?	29.3.1b				
Does the CBO assign a lookout crew person for swimmers or scuba divers?	29.3.1c.5				
Are float plans being completed and supplied to the Safety or Environmental/Safety Focal Point or Station Manager prior to each boat trip?	29.3.1c.2				
Are appropriate personal flotation devices being utilized by boat personnel?	29.3.2a				
Are all boats, equipped with the minimum equipment requirements as stated in this procedure?	29.3.3.a-n				
Are proper fueling procedures being followed?	29.3.4				
Are all boats clearly marked with loading limits in accordance with this procedure?	29.3.5b				

Requirements	Reference	YES	NO	N/A	Comments
Do all CBOs complete the required safety procedures prior to operating the boat?	29.3.6a.1-10				
Are correct transfer of personnel procedures being used?	29.3.7				
Are complete shutdown/securing procedures being implemented?	29.3.8				
Are boat accidents being reported in a proper and timely manner to the Station Manager, RSM and the Regional Environmental/Safety Coordinator?	29.3.9b				
Is a "Casualty or Accident Report" being completed and submitted to the proper authorities?	29.3.9d				
Are accidents being recorded and reported according to Occupational Safety and Health Procedure # 18 "Accident/Illness Reporting and Recording" and Section 29.3.9?	29.3.1c.6				
Are periodic maintenance checks of each boat being conducted and recorded?	29.3.10a				
Is scheduled preventative maintenance conducted regularly on boats, trailers and engines?	29.3.10b				
Are all CBO's and crew personnel trained in small boat safety and emergency procedures involving boating accidents?	29.3.11a				

Requirements	Reference	YES	NO	N/A	Comments
Are annual reviews of this procedure being conducted to ensure that the facility is complying with the requirement of this procedure?	29.4.2a				



## 29 SMALL BOAT SAFETY

### 29.1 Purpose and Scope

As part of its goal to provide a safe and healthful workplace, the National Weather Service (NWS) is promulgating this procedure related to hazards associated with the operation of small boats. This procedure applies to all NWS work locations and employees where small boats are owned/operated by an NWS facility.

### 29.2 Definitions

Certified Boat Operator (CBO). An National Weather Service (NWS) employee who holds either a current U.S. Coast Guard operator's license or equivalent, or has completed the 7-hour "Boating Skills and Seamanship" course conducted by the U.S. Power Squadron.

Crewman. Any NWS or contractor employee who is a passenger on an NWS boating operation.

EPIRB. Emergency position indicating radio beacon.

Field Office. A Field Office may include the following: Weather Forecast Office (WFO), River Forecast Center (RFC), Weather Service Office (WSO), or a Data Collection Office (DCO).

Lookout Crewman. A NWS employee who is appointed by the CBO to look out and warn of swimmers, scuba divers, etc., in the boating area.

Operating Unit. For the purpose of this procedure, Operating Unit includes the National Centers for Environmental Prediction (NCEP), National Data Buoy Center (NDBC), NWS Training Center (NWSTC), National Reconditioning Center (NRC), Radar Operations Center (ROC), or the Sterling Research & Development Center (SR&DC).

Personal Floatation Device (PFD). Life preservers, buoyant vests, special purpose water safety devices, buoyant cushions, or ring buoys and work vests, each of which must be United States Coast Guard approved.

RSM. A NOAA Regional Safety Manager.

Small Boat. Any NWS boat approximately 25 feet or less in length.

Station Manager. For the purpose of this procedure, the Station Manager will be either the NWS Regional Director; Directors of Centers under NCEP (Aviation Weather Center, NP6; Storm Prediction Center, NP7; and Tropical Prediction Center, NP8); Directors of the NDBC, NWSTC, and Chiefs of NRC, ROC and SR&DC facilities; or Meteorologist in Charge (MIC), Hydrologist in Charge (HIC), or Official in Charge (OIC).

Valid Certificate Number. An identification number placed on a vessel and issued in the state in which the vessel is principally used.

## 29.3 Procedure

### 29.3.1 Operating Boats

- a. The provisions of 33 CFR, “Navigation and Navigational Water” and the regulations of the State or Territory in which the boat is operated are the basis for all safety and health procedures involving the operation of small boats. Compliance with the most current editions of these standards and all other applicable regulations is required.
- b. Only a Certified Boat Operator (CBO) shall operate the boat.
- c. The CBO shall:
  - (1) Ensure that a valid certificate number is on the boat.
  - (2) Leave a float plan (See Attachment C: Sample Float Plan) with the safety focal point or the station manager before departing on any boat trip. This plan should contain the boat number, a description of the boat, the number of passengers, the names and ages of all passengers, the destination and proposed route, estimated time of return and other pertinent information.
  - (3) Ensure that only qualified personnel are allowed to operate the boat.
  - (4) Ensure that all crewmen comply with all applicable safety requirements and procedures.
  - (5) Assign a “lookout crewman” to alert the CBO of swimmers or scuba divers.
  - (6) Report any accident according to Section 29.3.9 and/or according to Occupational Safety and Health Procedure 18, “Accident/Illness Reporting and Recording”.

### 29.3.2 General Safety Procedures

- a. All personnel on board an operating NWS small boat shall wear a Type I, II or III personal floatation device (PFD).
  - (1) Type I PFD, or Offshore Life Jacket, provides the most buoyancy. It is effective for all waters, especially open, rough, or remote waters where rescue may be delayed. It is designed to turn most unconscious wearers in the water to a face-up position. The Type I comes in two sizes: Adult size provides at least 22 pounds of buoyancy, the child size, 11 pounds, minimum.



- (2) Type II PFD, or Near-Shore Buoyant Vest, is intended for calm, inland water or where there is a good chance of quick rescue. This type will turn some unconscious wearers to a face-up position. The turning action is not as pronounced nor as effective as a Type I. An adult size provides at least 15.5 pounds buoyancy, a medium child size provides 11 pounds. Infant and small child sizes each provide at least 7 pounds buoyancy.
- (3) Type III PFD, or Floatation Aid, is good for calm, inland water, or where there is a good chance of quick rescue. It is designed so that wearers can put themselves in a face-up position in the water. The wearers may have to tilt their heads back to avoid turning face down. Type III has the same minimum buoyancy as a Type II PFD. Float coats, fishing vests, and vests designed for various water sports are examples of Type III PFDs.
- b. Personnel shall only ride in or on parts of the boat designated for such use.
- c. All boats shall be kept clean and free of wastes and materials that could cause a fire or tripping hazard.
- d. Smoking is prohibited on all small boats.

**29.3.3 Minimum Equipment Required for Small Boats**

- a. Back-fire flame arrestor for each carburetor of all gasoline engines except outboard motors.
- b. Appropriate ventilation equipment for ventilating closed compartments that contain gasoline engines.
- c. Boats 16 feet or greater in length, the boat must also contain a Type IV throwable floatation device.
- d. Sound-producing device such as a whistle, bell or horn.
- e. Visual distress signal devices for nighttime boat use; for boats 16 feet or greater in length, the boat must also contain signals approved for both daytime and nighttime use (required for coastal waters only).
- f. All power boats, except outboards, under 26 feet and of open construction must carry one B-1, U.S. Coast Guard approved fire extinguisher.
- g. Appropriate lighting, including port and starboard lights.
- h. Method of two-way communication (VHF radio or cellular phone).
- i. Boat hook.
- j. Oar, paddle or other alternate propulsion device.
- k. Knife.

- l. Bow line.
- m. First aid kit.
- n. Anchor.

29.3.4 Fueling Boats

- a. During fueling, all doors, hatches and ports must be closed. Additionally, all galley fires and pilot lights must be extinguished before fueling can begin.
- b. Smoking is prohibited at all times.
- c. Fuel tank capacity should be known in order to determine the amount of oil necessary if the boat requires a gasoline/oil mixture.
- d. All portable tanks shall be fueled outside the boat.
- e. After fueling, all fuel tank spaces shall be ventilated for at least five minutes. The machinery and fuel tank spaces shall then be checked for the presence of fuel spills or fuel vapors. If a spill or vapor is detected, clean up the spill and continue ventilating the associated spaces until the vapors are no longer detected. Note: Test equipment to identify the presence of fuel vapors is not required.

29.3.5 Safe Loading

- a. The maximum weight capacity shall not be exceeded in any small boat. Weight capacity limits can be obtained from Coast Guard, 33 CFR 183, Subpart C, "Safe Loading."
- b. All boats shall be clearly marked with loading limits in accordance with Coast Guard, 33 CFR 183, Subpart B, "Display of Capacity Information." (See Attachment B).

29.3.6 Preparing for Start-Up

- a. The CBO shall complete the following steps before operating the boat:
  - (1) Check oil and gas levels.
  - (2) Check navigation lights and horns.
  - (3) Ensure the engine is in neutral.
  - (4) Trim engines (tilt) and test the engine steering responses to be sure no lines or other materials are fouled in the engine lower units.
  - (5) Secure all cargo and equipment.
  - (6) Check battery connections and assure battery is fully charged.

- (7) Ensure all hull bilge drain plugs are in place and secure.
- (8) Check bilge level and pump operation.
- (9) Ensure water pumps are operational immediately after starting.
- (10) Ensure proper operation of radio (call another vessel or station) and other navigation equipment (EPIRB, compass, loran C, radar, GPS, etc.).

**29.3.7 Transfer of Personnel**

- a. Before boarding, prepare safety lines and floats. Ensure that all personnel have appropriate personal floatation devices.
- b. Check wind and current and be adjust equipment to compensate for their effects. Set up all lines for safe operation.
- c. Approach buoy or object from the lee side.
- d. Personnel may be transferred to and from the boat on either the bow or port and starboard quarters as dictated by weather conditions and the operator's personal judgement.
- e. Instruct the crewman to place fenders at the location of transfer and to never use hands, arms or legs to try and stop the contact of the boat with any object.
- f. Whenever possible, moor at least one line to the buoy or object for more control.
- g. Have the crewman remain at the transfer location to assist in the transfer of personnel.
- h. If a person(s) falls in the water, immediately shut off engines (calm seas) or switch engines to neutral to stop propellers from moving (rough seas) and begin retrieval of the person(s) in the water.

**29.3.8 Shutdown/Securing**

- a. The CBO and crewmen shall complete the following steps to shut down and secure the boat:
  - (1) Turn off gas line to engines while engines are still running.
  - (2) Turn off engines after the gas is depleted in the engine and line.
  - (3) Tilt engines fully to raised position.
  - (4) Secure all navigation lights and equipment and turn off battery power.
  - (5) Pick up all loose lines, equipment and materials and stow onboard or remove from the boat as required.

- (6) Close all doors and windows.

29.3.9 Reporting Boat Accidents

- a. The CBO shall give his/her name, address, and vessel identification number to the injured person(s) or to the owner(s) of damaged property.
- b. The CBO shall notify the Station Manager, Regional Safety Manager, and the Regional or Operating Unit Environmental/Safety Coordinator of any accident that occurs as soon as possible.
- c. The CBO shall submit the proper information in accordance with state/territory regulations and the requirements of Coast Guard, 33 CFR 173.57, "Casualty or Accident Report." (See Attachment A, Casualty/Accident Report Form).
- d. The Casualty or Accident Report shall be submitted to:
  - (1) The reporting authority where the vessel number was issued, or
  - (2) The reporting authority where the accident occurred, if it occurred outside the state where the vessel is registered.

29.3.10 Maintenance and Repair

- a. Periodically check the condition of the following items as applicable: ropes, anchor chain, wiring and electrical connections, hull, nuts and bolts, prop, the trailer tongue, tires, lights, structural members, rollers and guides, bearings, and winch lubrication. An entry shall be made into the boat record after each periodic check, even when the check was unscheduled.
- b. Preventive maintenance (PM) to the boat, trailer, and engines shall be conducted regularly with the schedule based on engine run time and/or calendar days (monthly, quarterly, semi-annually, annually, etc.).
- c. Routine repairs to the boat, trailer, and engines shall be performed based in part on the information gathered from the periodic checks and from PM inspections.

29.3.11 Training Requirements. All CBOs and crewmen shall receive training on small boat safety. Additional training shall be provided as needed:

- a. On emergency procedures involving boating accidents.
- b. For changing job assignments and for expanded responsibilities.

## 29.4 Quality Control

### 29.4.1 Regional or Operating Unit Environmental/Safety Coordinators

- a. Shall perform an annual assessment of the regional headquarters facilities or operating unit to monitor and promote compliance with the requirements of this procedure.
- b. Shall perform assessments or designate personnel to perform assessments of all field offices to monitor and promote compliance with the requirements of this procedure every two years.

### 29.4.2 Station Manager

Shall review, or delegate review, of this procedure on an annual basis to ensure that the facility is complying with its requirements. Confirmation of this review shall be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

### 29.4.3 NWS Headquarters (NWSH)

- a. The NWS Safety Office shall perform an annual assessment of the NWSH facilities to ensure that the facilities are in compliance with this procedure.
- b. The NWSH Safety Office shall periodically perform an assessment of the regional headquarters and field offices to ensure compliance with this procedure. The frequency of these regional and field office assessments shall be determined by the NWSH Safety Office.
- c. Requests for clarification concerning this procedure shall be directed to the NWSH Safety Office.

## 29.5 Responsibilities

### 29.5.1 Regional or Operating Unit Environmental/Safety Coordinators\*

Shall monitor and coordinate to promote compliance with the requirements of this procedure for the regional headquarters, and field offices or operating units.

### 29.5.2 Station Manager\*

- a. Shall have oversight over the implementation of this procedure, and ensure that the requirements of this procedure are followed by individuals at the NWS facility.
- b. Shall provide and maintain, as necessary, equipment listed in 29.3.3a-n.

### 29.5.3 Safety or Environmental/Safety Focal Point\*

Shall ensure that any responsibilities delegated to them by the Station Manager are implemented in accordance with the requirements of this procedure.

29.5.4 Employees\*

- a. Employees affected by this procedure are required to read, understand and comply with the requirements of this procedure.
- b. Report unsafe or unhealthful conditions and practices to their supervisor or safety focal point.
- c.

**NOTE:** \* - Reference NWS PD 50-11 for complete list of responsibilities  
<http://www.nws.noaa.gov/directives/050/pd05011a.pdf>

## 29.6 References

Incorporated References. The following list of references is incorporated as a whole or in part into this procedure. These references can provide additional explanation or guidance for the implementation of this procedure.

- 29.6.1 Navigation and Navigable Waters, Title 33 of the Code of Federal Regulations.
- 29.6.2 Battelle Memorial Institute, Standards-Based Management System (SMBS), *Boat Operations*. <http://sbms.pnl.gov:2080/standard/1m/1m00t010.htm>. 1995-1998.
- 29.6.3 BoatSafe.com, *Nautical Know How*, International Marine Educators, Inc., 1998, <http://boatsafe.com/nauticalknowhow/index.htm>. November 8, 1998.
- 29.6.4 BoatSafe.com, *The Rules of the Road: International Regulations for Avoiding Collisions at Sea*, Marine Educators, Inc., 1998,. <http://boatsafe.com/nauticalknowhow/index.htm>. November 8, 1998.
- 29.6.5 NAO 217-103, Management of NOAA Small Boats.
- 29.6.6 NAO 209-115, NOAA Employees Aboard Non-NOAA Vessels.
- 29.6.7 NWS Occupational Safety and Health Procedure #18, "Accident/Illness Reporting and Recording."

## 29.7 Attachments

- Attachment A. Casualty/Accident Report Form
- Attachment B. Display of Capacity Information
- Attachment C. Sample Float Plan

**ATTACHMENT A**  
**Casualty/Accident Report Form**

Date:\_\_\_\_\_ Time:\_\_\_\_\_ Location:\_\_\_\_\_

Name of nearest town, county, state, body of water:\_\_\_\_\_

Visibility/weather/water conditions:\_\_\_\_\_

Estimated air/water temperatures:\_\_\_\_\_

Registration/certificate number(s) and name(s) of each vessel involved:\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Name and address of each owner of each vessel involved:\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Name and address of each operator of each vessel involved: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Name, address, age or date of birth, telephone number, vessel operating experience, and boating safety training of the operator making the report:\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Number of persons on board or towed on skis by each vessel:\_\_\_\_\_

Name, address, and date of birth of each person injured or killed:\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Cause of each injury/death:\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

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Weather forecasts available to, and weather reports used by, the operator before and during the use of the vessel:\_\_\_\_\_

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Name and address of each owner of property involved:\_\_\_\_\_

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Availability and use of personal flotation devices:\_\_\_\_\_

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Type and amount of each fire extinguisher used:\_\_\_\_\_

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Nature and extent of each injury:\_\_\_\_\_

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Description of all property damage and vessel damage with an estimate of the cost of all repairs:\_\_\_\_\_

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Description of each equipment failure that caused or contributed to the cause of the casualty:\_\_\_\_\_

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Description of the vessel casualty or accident:\_\_\_\_\_



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Type of vessel operation (cruising, drifting, etc.) and the type of accident (capsizing, sinking, fire, or explosion or other):

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Opinion of the person making the report as to the cause of the casualty, including whether or not alcohol and/or drugs, were a cause or contributed to causing the casualty:

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Make, model, type (open, cabin, house or other) beam width at widest point, length, depth from transom to keel, horsepower, propulsion, fuel, construction, and year built, of the reporting operator's vessel:

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Name, address and telephone number of each witness:

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Manufacturer's hull identification number, if any, of the reporting operator's vessel:

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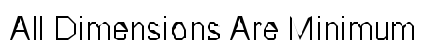
Name, address and telephone number of the person submitting the report:

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## ATTACHMENT C

## Sample Float Plan

Name of vessel's operator:		
Telephone Number:		
Name of Vessel:		
Registration/Certificate No.:		
Description of Vessel: Type: Make: Color of Hull: Color of Trim: Most distinguishing identifiable feature:		
Rafts/Dinghies: Number: _____ Size: _____ Color: _____		
Number of persons onboard: (List additional passengers on back).		
Name:	Age:	Address & Telephone
Engine Type: _____ H.P.: _____ Normal Fuel Supply: _____		

Survival equipment on board: (check as appropriate)		
~ Life Jackets	~ Flares	~ Smoke Signals
~ First Aid Kit	~ EPIRB	~ Paddles
~ Fire Extinguisher	~ Boat Hook	~ Knife
~ Bow Line	~ VHF Radio/Cell Phone	~ Bell, Whistle or Horn
~ Anchor	~ Loran/GPS	~ _____
Food for _____ days - Water for _____ days		
Trip:		
Date and Time of Departure:		
Departure From:		
Departure To:		
Expected time of arrival: _____ In no case later than: _____		
Additional information:		